

IN THE CLAIMS:

Please amend claims 1-5 and 8-18, cancel claims 6, 7, and 19-23 and add claims 24-27 as follows.

1. (Currently Amended) A method ~~for transferring state information in a computer cluster comprising a plurality of computer nodes, the method comprising the steps of:~~

~~transmitting a heartbeat message from a first computer node of a computer cluster to a second computer node of the computer cluster, the second computer node~~
receiving, in at least one second computer node of a computer cluster, periodic heartbeat messages from a first computer node of the computer cluster, each of the at least one second computer node including at least one resource for performing at least one cluster-specific task;

~~receiving the heartbeat message in the second computer node;~~

~~retrieving state information for~~ transmitting a heartbeat acknowledgment messages from the at least one second computer node to the first computer node as responses to the heartbeat messages to indicate to the first computer node tha the at least one second computer node is operative within the computer cluster; ~~to be sent as a response to said heartbeat message, the state information indicating an ability of said at least one resource to perform said at least one cluster-specific task; and~~

receiving, in at least one of the second computer nodes, state information for any one or more of the heartbeat acknowledgment messages, wherein the state information is

indicative of an ability of the at least one resource to perform the at least one cluster-specific task; and

sending the state information in one or more of the heartbeat acknowledgment messages to the first computer node for storing the state information in the first computer node.

2. (Currently Amended) ~~A~~The method according to claim 1, further comprising a ~~step of~~ examining, in response to ~~the~~ the receiving step, whether state information is to be retrieved for ~~at the~~ heartbeat acknowledgment message, wherein the heartbeat acknowledgment message is any of the heartbeat acknowledgement messages.

3. (Currently Amended) ~~A~~The method according to claim 2, wherein the examining ~~step~~ includes examining whether a predetermined condition is fulfilled.

4. (Currently Amended) The~~A~~ method according to claim 3, wherein the retrieving and sending the state information ~~steps~~ are performed when the examining ~~step~~ indicates that the predetermined condition is fulfilled, and ~~wherein the method further comprises the step of~~

the transmitting comprises transmitting a heartbeat acknowledgment message without state information when the examining ~~step~~ indicates that the predetermined condition fails to be fulfilled, wherein the heartbeat acknowledgment message is any of the

heartbeat acknowledgement messages.

5. (Currently Amended) The A-method according to claim 1, further comprising a ~~step of~~ determining a type of state information to be retrieved for the heartbeat acknowledgment message.

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) A computer cluster comprising a plurality of computer nodes, the computer cluster comprising:

~~—a transmitting unit configured to transmit~~~~first means for transmitting~~ a heartbeat message from a first computer node of the computer cluster to a second computer node of the computer cluster, the second computer node including at least one resource for performing at least one cluster-specific task;

~~—a receiving unit configured to receive~~~~second means for receiving~~ the heartbeat message in the second computer node;

~~—a retrieving unit configured to retrieve~~~~third means for retrieving~~ state information for a heartbeat acknowledgment message to be sent as a response to said heartbeat message, the state information indicating an ability of said at least one resource to perform said at

least one cluster-specific task; and

~~–a sending unit configured to send~~^{fourth means for sending} the state information in the heartbeat acknowledgment message to the first computer node; and

a storing unit in the first computer node configured to store the state information for managing the computer cluster.

9. (Currently Amended) The~~A~~ computer cluster according to claim 8, further comprising a Management Information Base (MIB)~~–operably connected to the first computer node for storing the state information sent to the first computer node.~~

10. (Currently Amended) The~~A~~ computer cluster according to claim 9, further comprising ~~first access means for accessing~~an access unit configured to access the Management Information Base from the computer cluster.

11. (Currently Amended) The~~A~~ computer cluster according to claim 9, further comprising an access unit configured to access ~~second access means for accessing~~ the Management Information Base from outside of the computer cluster.

12. (Currently Amended) The~~A~~ computer cluster according to claim 11, wherein the ~~second access means comprise~~access unit comprises a network interface in the first computer node.

13. (Currently Amended) A computer node for a computer cluster, the computer node comprising:

–at least one resource for performing at least one cluster-specific task;

~~first means for receiving~~ a receiving unit configured to receive a heartbeat message from another computer node;

a transmitting unit configured to transmit heartbeat acknowledgement messages to the other computer node as responses to the heartbeat messages to indicate to the other node that the computer node is operative within the computer cluster;

~~second means for a~~ retrieving unit configured to retrieve state information for any one or more of the heartbeat acknowledgment messages to be sent as a response to said heartbeat message, wherein the state information is indicative ~~indicating the of an~~ ability of said at least one resource to perform said at least one cluster-specific task; and

~~–third means a~~ sending unit, responsive to the ~~second means~~ retrieving unit, configured to send ~~for sending the state information in any one or more of the heartbeat acknowledgment messages to said another computer node.~~

14. (Currently Amended) ~~The~~ A computer node according to claim 13, further comprising ~~fourth means for examining~~ an examining unit configured to examine whether state information is to be retrieved for the ~~a~~ heartbeat acknowledgment message, wherein the heartbeat acknowledgement message to any of the heartbeat acknowledgement messages.

15. (Currently Amended) ~~A method for obtaining state information in a computer cluster comprising a plurality of computer nodes, the method comprising the steps of:~~

~~—transmitting a periodic heartbeat messages from a first computer node of a computer cluster to at least one a second computer node of the computer cluster, each of the at least second computer node including at least one resource for performing at least one cluster-specific task;~~

~~—awaiting receipt of a heartbeat acknowledgment messages from the at least one second computer node as a response to a heartbeat message, wherein the heartbeat message is any of the heartbeat messages and the heartbeat acknowledgment message indicates that the at least one second computer node is operative within the computer cluster; and~~

~~—receiving the heartbeat acknowledgment message including state information indicative of ~~indicating~~ an ability of said at least one resource to perform said at least one cluster-specific task; and~~

~~storing the state information for managing the computer cluster.~~

_____ 16. (Currently Amended) ~~The~~A method according to claim 15, further comprising ~~a step of~~ storing the state information sent to the first computer node in a Management Information Base, ~~(MIB).~~

17. (Currently Amended) ~~The~~A method according to claim 16, further comprising ~~a step of~~ transferring data from the Management Information Base to an entity external to

the computer cluster.

18. (Currently Amended) ~~A~~ The method according to claim 15, wherein ~~the~~ step ~~of a~~ receiving the heartbeat acknowledgment message further comprises removing the second computer node from the cluster when no heartbeat acknowledgement message is received within a predetermined period of time.

19-23. (Cancelled)

24. (New) A computer node for a computer cluster, the computer node comprising:

a transmitting unit configured to transmit periodic heartbeat messages to at least one second computer node of the computer cluster, each of the at least one second computer node including at least one resource for performing at least one cluster-specific task;

receiving unit configured to receive the heartbeat acknowledgment messages from the at least one second computer node as response to the heartbeat messages, the heartbeat acknowledgment messages indicating that the at least one second computer node is operative within the computer cluster;

an examining unit configured to examine when heartbeat acknowledgement messages comprises state information indicative of an ability of the at least one resource to perform said at least one cluster-specific task, wherein the heartbeat acknowledgment

message is any of the heartbeat acknowledgement messages;

a storing unit configured to store the state information for managing the computer cluster.

25. (New) A computer cluster comprising a plurality of computer nodes, the computer cluster comprising:

transmitting means for transmitting a heartbeat message from a first computer node of the computer cluster to a second computer node of the computer cluster, the second computer node including at least one resource for performing at least one cluster-specific task;

receiving means for receiving the heartbeat message in the second computer node;

retrieving means for retrieving state information for a heartbeat acknowledgment message to be sent as a response to said heartbeat message, the state information indicating an ability of said at least one resource to perform said at least one cluster-specific task;

sending means for sending the state information in the heartbeat acknowledgment message to the first computer node; and

storing means, in the first computer node, for storing the state information.

26. (New) A computer node for a computer cluster, the computer node comprising:

at least one resource for performing at least one cluster-specific task;

receiving means for receiving periodic heartbeat messages from another computer node;

transmission means for transmitting heartbeat acknowledgement messages to the other computer node as responses to the heartbeat messages to indicate to the other computer node that the computer node is operative within the computer cluster;

retrieving means for retrieving state information for any one or more of the heartbeat acknowledgment messages, wherein the state information is indicative of an ability of the at least one resource to perform the at least one cluster-specific task; and

sending means, responsive to the second means, for sending the state information in any one or more of the heartbeat acknowledgment message to said other computer node.

27. (New) A computer node for a computer cluster, the computer node comprising:

transmitting means for transmitting periodic heartbeat messages to at least one second computer node of the computer cluster, each of the at least one second computer node including at least one resource for performing at least one cluster-specific task;

reception means for receiving the heartbeat acknowledgment messages from the at least one second computer node as responses to the heartbeat messages, the heartbeat acknowledgment messages indicating that the at least one second computer node is operative within the computer cluster;

examining means for examining when heartbeat acknowledgement messages

comprises state information indicative of an ability of the at least one resource to perform said at least one cluster-specific task, wherein the heartbeat acknowledgment message is any of the heartbeat acknowledgement messages;

a storing means for storing the state information for managing the computer cluster.